P⊛RTAL

USPTO

Search: ⊙ The ACM Digital Library   ○ The Guide

view dependent displacement mapping

SEARCH

THE ACM DIGITAL LIBRARY

ℹ Feedback Report a problem Satisfaction survey

Terms used **view** **dependent** **displacement** **mapping**   Found **43,908** of **178,880**

Sort results by   [relevance ▼]   ❖ Save results to a Binder   Try an Advanced Search
Display results   [expanded form ▼] ? Search Tips   Try this search in The ACM Guide
                                     □ Open results in a new window

Results 1 - 20 of 200   Result page: **1** 2 3 4 5 6 7 8 9 10   next
Best 200 shown   Relevance scale □▢▣▤▆

1 Underline View-dependent displacement mapping   ▆

Lifeng Wang, Xi Wang, Xin Tong, Stephen Lin, Shimin Hu, Baining Guo, Heung-Yeung Shum
July 2003 **ACM Transactions on Graphics (TOG)**, Volume 22 Issue 3
Publisher: ACM Press

Full text available: 🗎 pdf(8.18 MB)   Additional Information: full citation, abstract, references, citings, index terms

Significant visual effects arise from surface mesostructure, such as fine-scale shadowing, occlusion and silhouettes. To efficiently render its detailed appearance, we introduce a technique called view-dependent displacement mapping (VDM) that models surface displacements along the viewing direction. Unlike traditional displacement mapping, VDM allows for efficient rendering of self-shadows, occlusions and silhouettes without increasing the complexity of the underlying surface mesh. VDM is based ...

Keywords: displacement maps, hardware rendering, mesostructure, reflectance and shading models

2 Adaptive view dependent tessellation of displacement maps   ▆

Michael Doggett, Johannes Hirche
August 2000 **Proceedings of the ACM SIGGRAPH/EUROGRAPHICS workshop on Graphics hardware**
Publisher: ACM Press

Full text available: 🗎 pdf(8.06 MB)   Additional Information: full citation, abstract, references, citings, index terms

Displacement Mapping is an effective technique for encoding the high levels of detail found in today's triangle based surface models. Extending the hardware rendering pipeline to be capable of handling displacement maps as geometric primitives, will allow highly detailed models to be constructed without requiring large numbers of triangles to be passed from the CPU to the graphics pipeline. We present a new approach based on recursive tessellation that adapts to the surface complexity descr ...

Keywords: displacement mapping, graphics hardware

3 Multiresolution rendering with displacement mapping   ▆

Stefan Gumhold, Tobias Hüttner
July 1999 **Proceedings of the ACM SIGGRAPH/EUROGRAPHICS workshop on Graphics hardware**
Publisher: ACM Press

Full text available: 🗎 pdf(1.53 MB)   Additional Information: full citation, references, citings, index terms

Keywords: displacement mapping, hardware, multiresolution

4 Rendering effects: Real-time high-quality View-Dependent Texture Mapping using per-pixel visibility

Damien Porquet, Jean-Michel Dischler, Djamchid Ghazanfarpour

November 2005 **Proceedings of the 3rd international conference on Computer graphics and interactive techniques in Australasia and South East Asia GRAPHITE '05**

Publisher: ACM Press

Full text available: pdf(838.09 KB)   Additional Information: full citation, abstract, references, index terms

We present an extension of View-Dependent Texture Mapping (VDTM) allowing rendering of complex geometric meshes at high frame rates without usual blurring or skinning artifacts. We combine a hybrid geometric and image-based representation of a given 3D object to speed-up rendering at the cost of a little loss of visual accuracy.During a precomputation step, we store an image-based version of the original mesh by simply and quickly computing textures from viewpoints positionned around it by the u ...

Keywords: View-Dependent Texture Mapping, graphics hardware, image-based rendering, real-time rendering

5 Hardware accelerated per-pixel displacement mapping

Johannes Hirche, Alexander Ehlert, Stefan Guthe, Michael Doggett

May 2004 **Proceedings of the 2004 conference on Graphics interface GI '04**

Publisher: Canadian Human-Computer Communications Society

Full text available: pdf(308.64 KB)   Additional Information: full citation, abstract, references, citings

In this paper we present an algorithm capable of rendering a displacement mapped triangle mesh interactively on latest GPUs. The algorithm uses only pixel shaders and does not rely on adaptively adding geometry. All sampling of the displacement map takes place in the pixel shader and bi- or trilinear ltering can be applied to it, and at the same time as the calculations are done per pixel in the shader, the algorithm has automatic level of detail control. The triangles of the base mesh are extru ...

6 Shader-based rendering: Dynamic parallax occlusion mapping with approximate soft shadows

Natalya Tatarchuk

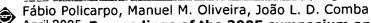March 2006 **Proceedings of the 2006 symposium on Interactive 3D graphics and games SI3D '06**

Publisher: ACM Press

Full text available: pdf(745.45 KB)   Additional Information: full citation, abstract, references, index terms

This paper presents a per-pixel ray tracing algorithm with dynamic lighting of surfaces in real-time on the GPU. First, we propose a method for increased precision of the critical ray-height field intersection and adaptive height field sampling. We achieve higher quality results than the existing inverse displacement mapping algorithms. Second, soft shadows are computed by estimating light visibility for the displaced surfaces. Third, we describe an adaptive level-of-detail system which uses the ...

Keywords: adaptive level-of-detail system, displacement mapping, image-based rendering, motion-parallax, real-time rendering, soft shadows, surface details

7 Meshes & surfaces: Real-time relief mapping on arbitrary polygonal surfaces

Fábio Policarpo, Manuel M. Oliveira, João L. D. Comba

April 2005 **Proceedings of the 2005 symposium on Interactive 3D graphics and**

games
Publisher: ACM Press
Full text available: pdf(884.41 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

This paper presents a technique for mapping relief textures onto arbitrary polygonal models in real time. In this approach, the mapping of the relief data is done in tangent space. As a result, it can be applied to polygonal representations of curved surfaces producing correct self-occlusions, interpenetrations, shadows and per-pixel lighting effects. The approach can be used to consistently add surface details to geometric models undergoing deformations, such as in the case of animated characte ...

Keywords: image-based rendering, motion parallax, real-time rendering, relief mapping, surface details

8 Object representation using 1D displacement mapping

Yi Xu, Yee-Hong Yang
May 2004 **Proceedings of the 2004 conference on Graphics interface GI '04**
Publisher: Canadian Human-Computer Communications Society
Full text available: pdf(564.63 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>

In this paper, we propose a new method for rendering image-based objects. An object is decomposed into a set of 1D displacement textures in a preprocessing stage. During rendering, each of these 1D displacement textures is rendered to its appropriate position in 3D space, using the hardware accelerated displacement mapping approach. Our method can represent and render complex objects with accurate appearance from arbitrary viewpoints. It can also render a complex object at a high frame rate, usi ...

Keywords: displacement mapping, image-based object, image-based rendering, texture mapping

9 Large meshes and GPU programming: Geometry clipmaps: terrain rendering using nested regular grids

Frank Losasso, Hugues Hoppe
August 2004 **ACM Transactions on Graphics (TOG)**, Volume 23 Issue 3
Publisher: ACM Press
Full text available: pdf(964.46 KB)
mov(24:47 MIN)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>

Rendering throughput has reached a level that enables a novel approach to level-of-detail (LOD) control in terrain rendering. We introduce the geometry clipmap, which caches the terrain in a set of nested regular grids centered about the viewer. The grids are stored as vertex buffers in fast video memory, and are incrementally refilled as the viewpoint moves. This simple framework provides visual continuity, uniform frame rate, complexity throttling, and graceful degradation. Moreover it allows ...

Keywords: level-of-detail control, terrain compression and synthesis

10 Natural objects: Real-time rendering of realistic-looking grass

Musawir A. Shah, Jaakko Kontinnen, Sumanta Pattanaik
November 2005 **Proceedings of the 3rd international conference on Computer graphics and interactive techniques in Australasia and South East Asia GRAPHITE '05**
Publisher: ACM Press
Full text available: pdf(294.72 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

The absence of accurately rendered grass in real-time applications such as games and simulation systems can be directly attributed to the massive amounts of geometry required to model grass patches. This in turn is responsible for the drastic increase in the

computational complexity of light transport for global illumination. Our work attempts to fill the void by presenting an image-based algorithm for interactive rendering of realistic-looking grass. A bidirectional texture function (BTF) is co ...

Keywords: BTF, grass, real-time rendering

11 3D texture: TensorTextures: multilinear image-based rendering

M. Alex O. Vasilescu, Demetri Terzopoulos
August 2004 **ACM Transactions on Graphics (TOG)**, Volume 23 Issue 3
Publisher: ACM Press
Full text available: pdf(768.66 KB)   Additional Information: full citation, abstract, references, index terms

This paper introduces a tensor framework for image-based rendering. In particular, we develop an algorithm called TensorTextures that learns a parsimonious model of the bidirectional texture function (BTF) from observational data. Given an ensemble of images of a textured surface, our nonlinear, generative model explicitly represents the multifactor interaction implicit in the detailed appearance of the surface under varying photometric angles, including local (per-texel) reflectance, complex me ...

Keywords: Bidirectional Texture Function, Image-Based Rendering, Multilinear Algebra, Statistical Learning, Tensor Decomposition, Tensors, Textured Surface Rendering

12 Smooth transitions between bump rendering algorithms

Barry G. Becker, Nelson L. Max
September 1993 **Proceedings of the 20th annual conference on Computer graphics and interactive techniques**
Publisher: ACM Press
Full text available: pdf(563.15 KB)   Additional Information: full citation, references, citings, index terms

Keywords: BRDF, animation, bump map, displacement map, rendering, surface detail, volume texture

13 Relief texture mapping

Manuel M. Oliveira, Gary Bishop, David McAllister
July 2000 **Proceedings of the 27th annual conference on Computer graphics and interactive techniques**
Publisher: ACM Press/Addison-Wesley Publishing Co.
Full text available: pdf(1.58 MB)   Additional Information: full citation, abstract, references, citings, index terms

We present an extension to texture mapping that supports the representation of 3-D surface details and view motion parallax. The results are correct for viewpoints that are static or moving, far away or nearby. Our approach is very simple: a relief texture (texture extended with an orthogonal displacement per texel) is mapped onto a polygon using a two-step process: First, it is converted into an ordinary texture using a surprisingly simple 1-D forward transform. The result ...

Keywords: image-based rendering, range images, rendering, texture mapping

14 Distance fields: Jump flooding in GPU with applications to Voronoi diagram and distance transform

Guodong Rong, Tiow-Seng Tan
March 2006 **Proceedings of the 2006 symposium on Interactive 3D graphics and games SI3D '06**

Publisher: ACM Press

Full text available: 📄 pdf(382.83 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>, <u>index terms</u>

This paper studies jump flooding as an algorithmic paradigm in the general purpose computation with GPU. As an example application of jump flooding, the paper discusses a constant time algorithm on GPU to compute an approximation to the Voronoi diagram of a given set of seeds in a 2D grid. The errors due to the differences between the approximation and the actual Voronoi diagram are hardly noticeable to the naked eye in all our experiments. The same approach can also compute in constant time an ...

Keywords: digital geometry, interactive application, programmable graphics hardware

15 <u>A hybrid hardware-accelerated algorithm for high quality rendering of visual hulls</u>

Ming Li, Marcus Magnor, Hans-Peter Seidel

May 2004 **Proceedings of the 2004 conference on Graphics interface GI '04**

Publisher: Canadian Human-Computer Communications Society

Full text available: 📄 pdf(224.31 KB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>references</u>

In this paper, a novel hybrid algorithm is presented for the fast construction and high-quality rendering of visual hulls. We combine the strengths of two complementary hardware-accelerated approaches: direct *constructive solid geometry* (CSG) rendering and texture mapping-based visual cone trimming. The former approach completely eliminates the aliasing artifacts inherent in the latter, whereas the rapid speed of the latter approach compensates for the performance deficiency of the former ...

Keywords: CSG Rendering, hardware-accelerated rendering, image-based modeling and rendering, texture mapping, visual hull

16 <u>The elements of nature: interactive and realistic techniques</u>

Oliver Deusen, David S. Ebert, Ron Fedkiw, F. Kenton Musgrave, Przemyslaw Prusinkiewicz, Doug Roble, Jos Stam, Jerry Tessendorf

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

Publisher: ACM Press

Full text available: 📄 pdf(17.65 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>

This updated course on simulating natural phenomena will cover the latest research and production techniques for simulating most of the elements of nature. The presenters will provide movie production, interactive simulation, and research perspectives on the difficult task of photorealistic modeling, rendering, and animation of natural phenomena. The course offers a nice balance of the latest interactive graphics hardware-based simulation techniques and the latest physics-based simulation techni ...

17 <u>Point-based computer graphics</u>

Marc Alexa, Markus Gross, Mark Pauly, Hanspeter Pfister, Marc Stamminger, Matthias Zwicker

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

Publisher: ACM Press

Full text available: 📄 pdf(8.94 MB)   Additional Information: <u>full citation</u>, <u>abstract</u>, <u>citings</u>

This course introduces points as a powerful and versatile graphics primitive. Speakers present their latest concepts for the acquisition, representation, modeling, processing, and rendering of point sampled geometry along with applications and research directions. We describe algorithms and discuss current problems and limitations, covering important aspects of point based graphics.

18 <u>Abstraction: X-toon: an extended toon shader</u>

Pascal Barla, Joëlle Thollot, Lee Markosian

June 2006 **Proceedings of the 3rd international symposium on Non-photorealistic animation and rendering NPAR '06**

Publisher: ACM Press

Full text available: .pdf(438.31 KB)   Additional Information: full citation, abstract, references

Traditional toon shading uses a 1D texture that describes how tone varies with surface orientation relative to a given light source. In this paper we describe two extensions to the basic algorithm that support view-dependent effects. First, we replace the 1D texture with a 2D texture whose second dimension corresponds to the desired "tone detail," which can vary with depth or surface orientation. This supports effects such as levels-of-abstraction, aerial perspective, depth-of-field, backlightin ...

19 Facial modeling and animation

Jörg Haber, Demetri Terzopoulos

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

Publisher: ACM Press

Full text available: .pdf(18.15 MB)   Additional Information: full citation, abstract

In this course we present an overview of the concepts and current techniques in facial modeling and animation. We introduce this research area by its history and applications. As a necessary prerequisite for facial modeling, data acquisition is discussed in detail. We describe basic concepts of facial animation and present different approaches including parametric models, performance-, physics-, and learning-based methods. State-of-the-art techniques such as muscle-based facial animation, mass-s ...

20 Projectors: advanced graphics and vision techniques

Ramesh Raskar

August 2004 **Proceedings of the conference on SIGGRAPH 2004 course notes GRAPH '04**

Publisher: ACM Press

Full text available: .pdf(6.53 MB)   Additional Information: full citation

Results 1 - 20 of 200   Result page: **1** 2 3 4 5 6 7 8 9 10   next

Useful downloads: Adobe Acrobat   QuickTime   Windows Media Player   Real Player

IEEE Xplore®
RELEASE 2.1

Welcome United States Patent and Trademark Office

☐ Search Results

BROWSE   SEARCH   IEEE XPLORE GUIDE   SUPPORT

Results for "((view dependent displacement map)<in>metadata)"
Your search matched **1** of **1360403** documents.
A maximum of **100** results are displayed, **25** to a page, sorted by **Relevance** in **Descending** order.

✉ e-mail   🖶 printer frier

» **Search Options**

<u>View Session History</u>

<u>New Search</u>

Modify Search

((view dependent displacement map)<in>metadata)   Search ≫

☐ Check to search only within this results set

Display Format: ⊙ Citation   ○ Citation & Abstract

» **Key**

IEEE JNL	IEEE Journal or Magazine
IEE JNL	IEE Journal or Magazine
IEEE CNF	IEEE Conference Proceeding
IEE CNF	IEE Conference Proceeding
IEEE STD	IEEE Standard

[view selected items]   **Select All** **Deselect All**

☐   1. **Realistic rendering of surface appearance using GPU**
     Baining Guo;
     <u>Computer Graphics and Applications, 2003. Proceedings. 11th Pacific Conference on</u>
     8-10 Oct. 2003 Page(s):3

     <u>AbstractPlus</u> | Full Text: <u>PDF</u>(171 KB)   IEEE CNF
     <u>Rights and Permissions</u>

Help   Contact Us   Privacy & Security   IEEE

Indexed by
🔲 Inspec®